

Face Recognition Smart Attendance System using Machine Learning Techniques

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Abstract: *Face recognition plays a crucial part in the practical arena and is one of the most operative image-processing applications. For authentication purposes, specifically in the context of student attendance, face recognition is a pressing issue. Face recognition is a method aimed at identifying students using face biostatistics based on high-definition monitoring and other computer technologies in an attendance system. The development of this system aims to digitize the traditional method of calling names and keeping pen-and-paper records to take attendance. The current methods for taking attendance are time-consuming and arduous. The manual recording makes it simple to alter attendance records. Both the existing biometric systems and the conventional method for taking attendance are susceptible to proxies. As a result, it is suggested that this paper address all of these issues. A live video stream is used to mark attendance with this system. OpenCV is used to extract the frames from the video. Face detection and face recognition, for which dlib is utilized, are the primary implementation steps in this type of system. After this, a comparison of the identified faces with the database of students' faces should make a relationship between them possible. Attendance reports will be created and saved in Google format following face recognition. The system is tested under a variety of conditions, including lighting, head movements, and the student's changing distance from the cameras. The overall complexity and accuracy are determined after extensive testing. When it came to taking attendance in a classroom without spending any time or doing any manual work, the proposed system proved to be a reliable and effective tool. The developed system is less expensive and requires less installation..*

Keywords: Attendance system, Automated attendance, Image Processing, Face detection, Feature matching, Face recognition

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